**What is claimed is:**

Claim 1. An electroactive hydrogel composition comprising acrylamide; unsaturated aliphatic acid having the formula R=CH-COOH, wherein R is selected from the group consisting of $-CH_2$, -CH-COOH, and $-CH-(CH_2)_n-COOH$, where n is an integer, or a combination of these aliphatic acids; a conductive polymer; and at least one cross-linking agent, wherein the hydrogel is electroactive in the absence of contact with electrodes and at a pH range of from about 3 to about 10.

Claim 2. The electroactive hydrogel composition of claim 1 wherein the unsaturated aliphatic acid is present in an amount of about 65 wt.%, of the total composition.

Claim 3. The electroactive hydrogel composition of claim 2 wherein the unsaturated aliphatic acid is most preferably acrylic acid, maleic acid, glutaconic acid, or a mixture thereof.

Claim 4. The electroactive hydrogel composition of claim 3 wherein the conductive polymer is a polypyrrole-carbon black composite.

Claim 5. The electroactive hydrogel composition of claim 4 wherein the polypyrrole-carbon black composite is present in an amount of about 4 wt.% of the total composition.

Claim 6. The electroactive hydrogel composition of claim 1 wherein the hydrogel comprises about 65 wt.% acrylic acid.

Claim 7. The electroactive hydrogel composition of claim 6 wherein the hydrogel comprises about 4 wt.% polypyrrole/carbon black.

Claim 8. The electroactive hydrogel composition of claim 1 wherein the hydrogel comprises about 20 wt.% bisacrylamide.

Claim 9. The electroactive hydrogel composition of claim 1 further comprising a therapeutic , prophylactic or diagnostic agent.

Claim 10. A drug delivery device for controlled delivery of a therapeutic, prophylactic agent or diagnostic agent to an animal comprising an electroactive hydrogel composition comprising acrylamide; unsaturated aliphatic acid having the formula R=CH-COOH, wherein R is selected from the group consisting of $-CH_2$, -CH-COOH, and $-CH-(CH_2)_n-COOH$, where n is an integer; a conductive polymer; and at least one cross-linking agent, wherein the hydrogel composition is electroactive over a pH range of from about pH 3 to about pH 10, in the absence of contact with electrodes, and in the presence of an electric energy source of from about 1 to about 5 V.

Claim 11. The drug delivery device of claim 10 wherein said device is implantable.

Claim 12. The drug delivery device of claim 11 wherein the device is a microvalve.

Claim 13. The drug delivery device of claim 12 wherein the device further comprises at least one reservoir containing the therapeutic, prophylactic or diagnostic agent, and wherein application of an electric current to the device causes the microvalve to intermittently release the therapeutic, prophylactic or diagnostic agent from the reservoir .

Claim 14. The drug delivery device of claim 10 wherein the unsaturated aliphatic acid comprises preferably about 65 wt.% acrylic acid.

Claim 15. The drug delivery device of claim 14 wherein the hydrogel composition comprises preferably about 4 wt.% polypyrrole-carbon black.

Claim 16. The drug delivery device of claim 15 wherein the composition comprises preferably about 20 wt.% bisacrylamide.

Claim 17. The drug delivery device of claim 9 wherein the device is implantable.

Claim 18. The drug delivery device of claim 9 wherein the electroactive hydrogel composition comprises about 65 wt.%, unsaturated aliphatic acid having the formula R=CH-COOH, wherein R is selected from the group consisting of $-CH_2$, -CH-COOH, and $-CH-(CH_2)_n-$COOH, where n is an integer; about4 wt.% polypyrrole-carbon black composite; and preferably about 20 wt.% N, N methylenebisacrylamide.

Claim 19. A method for delivering a therapeutic, prophylactic or diagnostic agent to a patient comprising

(a) applying on or implanting in the patient a drug delivery device comprising an electroactive hydrogel comprising acrylamide; unsaturated aliphatic acid having the formula R=CH-COOH, wherein R is selected from the group consisting of $-CH_2$, -CH-COOH, and $-CH-(CH_2)_n-COOH$, where n is an integer; a conductive polymer; at least one cross-linking agent; and a therapeutic, prophylactic or diagnostic agent; and

(b) activating the delivery device by applying a current of 40 mA or less, wherein electroactuation of the hydrogel results in release of the therapeutic agent, prophylactic agent or diagnostic agent from the drug delivery device.

Claim 20. The method of claim 19 wherein the electric field is applied at a predetermined cycle of positive and negative voltage.